Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
Promoting Expanded Opportunities for Radio	)	
Experimentation and Market Trials under Part 5 of the	)	ET Docket No. 10-236
Commission's Rules and Streamlining Other	)	
Related Rules	)	
	)	
2006 Biennial Review of Telecommunications	)	
Regulations – Part 2 Administered by the	)	ET Docket No. 06-105
Office of Engineering and Technology (OET)	)	

Comments of Cisco Systems, Inc.

Cisco Systems, Inc. ("Cisco") hereby respectfully submits reply comments in response to the above-captioned Notice of Proposed Rulemaking.[1] Cisco is the worldwide leader in networking solutions for the Internet and IP-based networks generally, and is a leading manufacturer of Wi-Fi® equipment and systems, as well as Femto cells and systems.[2] Cisco also manufacturers a multi-band enterprise tablet. In its development of new technology, Cisco often has the need to procure experimental radio licenses. Cisco appreciates the opportunity to comment in this proceeding, and agrees with the Commission that improved access to experimental authorizations can be of assistance in spurring innovation in radio technologies.

In the Notice of Proposed Rulemaking, the FCC broadly asks about its experimental license program and suggests several specific improvements. The Notice seeks comment on ways in which the

[1] Notice of Proposed Rulemaking, In the Matter of Promoting Expanded Opportunities for Radio Experimentation and Market Trials under Part 5 of the Commission's Rules and Streamlining Other Related Rules, ET Docket No.10-236, and 2006 Biennial Review of Telecommunications Regulation – Part 2 Administered by the Office of Engineering and Technology (OET), ET Docket No. 06-105, released November 30, 2010.

[2] Wi-Fi is a registered trademark of the Wi-Fi Alliance, an industry-created interoperability and marketing forum for IEEE 802.11 based technologies, generically known as Wireless Local Area Networks (WLAN). www.wi-fi.org

process of obtaining an experimental license could be improved by (1) creating a new class of experimental license called a "program license" for campus environments, (2) "innovation zones" and (3) for qualified medical care facilities to obtain blanket medical experimental authorizations. The Notice also seeks comment on market trial rules, and makes other suggested streamlining changes in the rules.

Cisco agrees that more flexibility in experimental licensing would be helpful to the development of radio technologies. Providing a campus-specific "site" authorization for experimental purposes could be a significant benefit to the ongoing development of radio technologies.[3] Cisco's only concern is that the Commission should expand its vision to give manufacturers the same campus-wide access to the new program license as universities.[4] Development of radio technology includes both commercial and academic activities, and from the perspective of managing authorizations, there is little difference between the two. In fact, the number of corporate campuses located in the United States where radio experimentation occurs is limited and the companies involved are most likely those with existing relationships to the FCC in the form of product authorizations or licenses held. Streamlining the work of corporate scientists, by providing a campus-based authorization, would be beneficial to radio innovation and help ensure that US industry remains at the forefront of the mobile Internet.

Cisco agrees with the Commission's concerns that this experimental license flexibility not result in harmful interference to licensed services and users. To that end, we agree that the following steps should be taken to ensure that there is no harmful interference, and that if interference is caused, it can quickly be remedied:

- Limit the license to a specified campus bounded by geographic coordinates or civic addresses representing a physical property owned or under the control of the institution; permit an

[3] Notice at para. 19.

[4] Notice at para. 20.

institution to seek a campus authorization for a portion of the physical property owned or under its control.

- Restricted frequencies shall not be used.
- Radio emissions associated with campus licenses should be considered based on the interference potential to other licensed services, as well as the specific frequencies that are the subject of the experimental activity. A one size fits all maximum power flux density would be both over and under protect licensees. The experimental authorization should be revocable if the FCC finds that in the exercise of the authorization, harmful interference to licensees occurred, and the FCC should have the capability to stop research activity at any stage and at any time based on complaints about harmful interference.
- Experimental licenses should specify that experiments must use the minimum power necessary and be restricted to the smallest practicable area needed to accomplish the experiment.
- Call sign identification will not work in all cases. Having information available via a web-based reporting portal is a good alternative to provide existing licensees with information about who is engaged in experimental activity in any given geography. Care must be taken not to make available too much information publicly, but the existence of a campus experimental authorization, its location, the frequencies to be used, and contact information are among the data points that could be readily available.
- Using a block of spectrum licensed to an existing licensee is an important issue for developers, since radio technology may be developed for non-US markets. Existing licensees should have a routinized method for experimental licensees to coordinate utilization of frequencies. Short term leasing of spectrum is not a good option for many research projects and can be cumbersome for those seeking spectrum on which to experiment. Helping parties to find a non-interfering way to allow an experiment to proceed is a preferred course. Licensees should be encouraged to create a standardized intake process, and to work

with those experimenting to see what arrangements work best for both parties, while at the same time do not impair services or communications the licensee is providing.

- Web portal information should be limited to those who need to know, ideally incumbent licensees in the area of the campus authorization; reporting requirements should include a report of the frequencies used in transmission, coordination history and/or issues, whether there was any reported interference and how it was mitigated. In addition, the applicant should be able to seek confidential treatment of information about the experimental activity. Cisco notes that even academic institutions may seek to license intellectual property created as a result of research activities.
- With the exceptions noted below, and subject to the constraints listed above, licensees should have the burden of proof to show that an experimental authorization could cause harmful interference.[5] However, as guests in the band, experimental authorization holders need to understand licensee concerns and determine how best to do perform experiments without causing harmful interference. In some cases, this may require those conducting the experiment to work more closely with licensees during initial live tests to see if there are problems that will cause harmful interference. Bands used for the provision of commercial mobile services, public safety spectrum, emergency or public safety systems on the institution's grounds require special protections. The burden of proof should shift in these cases to the applicant for the experimental authorization, and include a requirement that the experimental applicant file a specific plan in advance of using these frequencies. Cisco does not encourage the Commission to add a specific public interest showing to experimental applications associated with these more sensitive frequencies.[6] The decision to allow an experimental activity should be based on risk of harmful interference.

[5] Notice at para. 27.

[6] Notice at para. 31.

- No experimental license should be required for testing inside an anechoic chamber or Farraday cage.[7]

In addition to expanding the experimental campus authorization to include manufacturer campuses, Cisco also encourages the FCC to consider authorizations that would assist in compliance testing by accredited third party test labs, both for transmitters that are produced via the experimental program, as well as generally for transmitters intended for the U.S. or global market.[8] Accredited test labs would be benefited by a campus authorization. Alternatively, the FCC might allow the manufacturer to make a temporary update to its campus authorization via fast track process for short term (e.g., 60 days) to allow an accredited lab to test equipment for compliance. This method is akin to creating an STA, but for compliance testing only. In most cases, the testing in compliance labs is done under the supervision or technical direction of the manufacturer. This would however require the manufacturer be on site or designate someone at the lab to be its agent .

Cisco agrees with the proposals in the notice to expand and clarify the different types of market trials.[9] In the Notice, the Commission seeks comment on a plan to distinguish "product development trials" from "market trials" with the former designed to evaluate equipment and system performance in the developmental and design stages, while the latter evaluates product performance and customer acceptability prior to production. These are good suggestions and we urge the Commission to adopt them.

[7] Notice at para. 82.

[8] Notice at para. 83.

[9] Notice at para. 63.

Finally, Cisco further agrees with the proposal to allow devices to operate within Part 15 limits as part of a trade show demonstration.[10] Any devices used in this fashion should be properly labeled, and operating under the control of a manufacturer or its agent. In addition, the manufacturer should be required to coordinate the frequencies to be used with existing licensees.

Cisco appreciates the opportunity to provide comments in this important proceeding.

Respectfully submitted,

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[10] Notice at para. 84.